

[REMOTE DIAGNOSTICS AND PROGNOSTICS METHODS FOR COMPLEX SYSTEMS]

Abstract of Disclosure

A diagnostic/prognostic system monitors performance of a vehicle or other apparatus wherein the vehicle has a plurality of operational components. Each operational component has a predetermined nominal operating state and generates respective electrical signals pursuant to its operation. A data collection memory in the vehicle stores samples of the electrical signals in a rolling buffer. An analyzer in the vehicle is responsive to the electrical signals for detecting a trigger event indicative of at least a potential variance of an operational component from its nominal operating state. A computation center located remotely from the vehicle has a database storing representations of electrical signals for classifying nominal and irregular operating states of the operational components. A transmitter is activated by the trigger event to transmit at least some of the stored samples in the rolling buffer at the time of the trigger event to the computation center. The computation center receives the transmitted samples and classifies them according to the nominal or irregular operating states.

[illegible]